



4.2.2 Classwork

Name _____ Date _____

What is the significance of (h, k) ?
Describing (h, k) for each family of functions

Today's big goal

Identify the point (h, k) for parabolas, hyperbolas, cubics, and square root graphs, and relate the Point-Slope form of a line to (h, k) . Also, we will consolidate our understanding of parent graphs and general equations.

4-86

Think about the parent graph for parabolas, $y = x^2$.

- Write the equation of a parabola that will be the same as the parent graph, but shifted four units to the right.
- Does the **strategy** you used to move parabolas horizontally also work for other parent graphs? **Justify** your answer.
- You have learned that the general equation for a parabola is $y = a(x - h)^2 + k$. To move the graph of $y = x^2$ h units to the *right*, you replaced x^2 with $(x - h)^2$. Work with your team to **justify** why replacing x with $(x - h)$ moves a graph to the right. Think about multiple representations as you discuss this and be prepared to share your ideas with the class.

4-87

With your team, brainstorm a list of all of the families of functions that you have learned about so far in your study of algebra.

4-89

What is the equation of the parent graph of a line? Use what you have learned about transforming parent graphs to write the general equation of a transformed line.

- a. Use this general equation of a line to write the equation of a line with slope $\frac{4}{5}$ that passes through the point (3, 9).
- b. A line passes through the points (-1, 5) and (8, -2). Substitute each of these into the general equation to create a system of equations. Now solve this system to find the slope. Is this how you have found slope in the past?

Cut out and paste into your flipbook for 4-88.

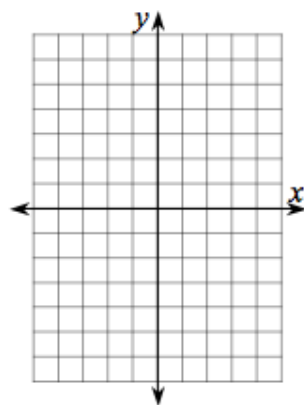
Name:

Parent Equation:

General Equation:

Properties:

Description of (h, k) :



Domain:

Range:

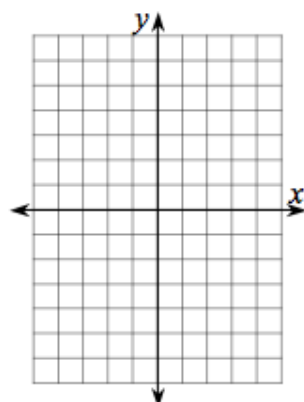
Name:

Parent Equation:

General Equation:

Properties:

Description of (h, k) :



Domain:

Range:

Name:

Parent Equation:

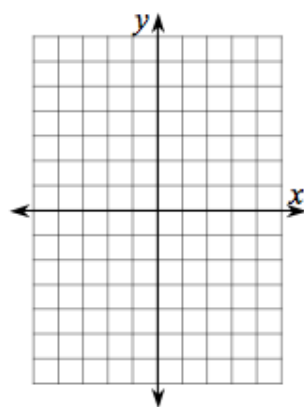
General Equation:

Properties:

Description of (h, k) :



Domain:



Range:

Name:

Parent Equation:

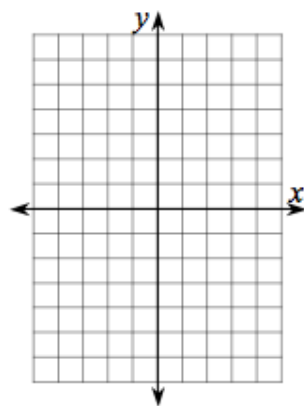
General Equation:

Properties:

Description of (h, k) :



Domain:



Range:

Name:

Parent Equation:

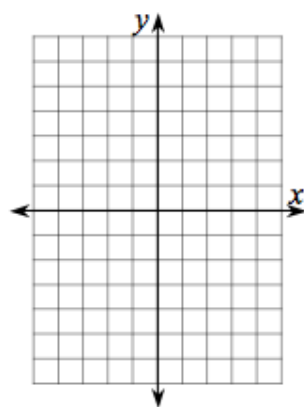
General Equation:

Properties:

Description of (h, k) :



Domain:



Range:

Name:

Parent Equation:

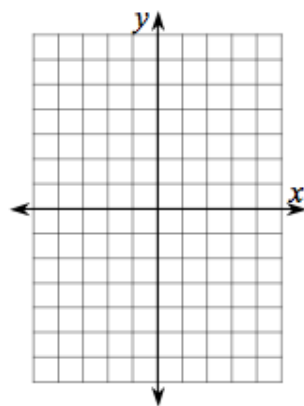
General Equation:

Properties:

Description of (h, k) :



Domain:



Range: